RENAME FINISH CONFLICT DETECTION AND RECOVERY

Abstract of Disclosure

An improved method and system for operating an out of order processor at a high frequency enabled by an increased pipeline length. It is proposed to shorten the pipeline by a considerable number of stages by accepting that a write after read conflict may occur, when directly after renaming, during the "read ROB" pipeline stage, all the information (tag, validity and data) is read from an Reorder Buffer ROB entry, and is next written, in a following pipeline stage "write RS", into a reservation station (RS) entry. In order to assure the correctness of processing in particular in cases of dependencies, e.g., write after read conflicts a separate inventional add in logic covers these cases. The logic detects the write after read conflict case of an Instructional Execution Unit (IEU) writing into the particular entry that is selected by the renaming logic during "read ROB". Then, a separate issue process selects the entries for which a conflict is reported and writes the data into the respective entry of the RS. This increases performance because those conflict cases are rather seldom compared to the broad majority of instructions to be found in a statistically determined average instruction flow.